1. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{72 - 66i}{-1 + 5i}$$

A. $a \in [-73, -71.5]$ and $b \in [-14.5, -12.5]$

B. $a \in [-16.5, -15]$ and $b \in [-295, -293.5]$

C. $a \in [9, 11]$ and $b \in [16, 17.5]$

D. $a \in [-16.5, -15]$ and $b \in [-11.5, -10.5]$

E. $a \in [-402.5, -401]$ and $b \in [-11.5, -10.5]$

---

2. Simplify the expression below and choose the interval the simplification is contained within.

$$17 - 14^2 + 5 \div 4 * 15 \div 13$$

A. $[-177.68, -176.84]$

B. $[-179.24, -177.84]$

C. $[213.8, 215.01]$

D. $[212.66, 214.13]$

E. None of the above

---

3. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{1980}{12}}$$

A. Irrational

B. Whole

C. Integer

D. Not a Real number

E. Rational

---

4. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-450}{10}}i + \sqrt{208}i$$

A. Pure Imaginary

B. Nonreal Complex

C. Irrational

D. Rational

E. Not a Complex Number

---

5. Simplify the expression below and choose the interval the simplification is contained within.

$$9 - 19 \div 15 * 4 - (6 * 14)$$

A. $[-34.93, -23.93]$

B. $[87.68, 98.68]$

C. $[-80.07, -76.07]$

D. $[-76.32, -71.32]$

E. None of the above

---

6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 - 55i}{3 + 6i}$$

A. $a \in [-8, -6.5]$ and $b \in [-6, -4]$

B. $a \in [-303.5, -302]$ and $b \in [-6, -4]$

C. $a \in [-8, -6.5]$ and $b \in [-220, -218.5]$

D. $a \in [7, 8.5]$ and $b \in [-3, -1.5]$

E. $a \in [2, 4.5]$ and $b \in [-11.5, -8]$

---

7. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{180625}{625}}$$

A. Whole

B. Not a Real number

C. Integer

D. Irrational

E. Rational

---

8. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(7 - 4i)(10 + 9i)$$

A. $a \in [30, 35]$ and $b \in [103, 105]$

B. $a \in [103, 112]$ and $b \in [-25, -19]$

C. $a \in [30, 35]$ and $b \in [-107, -101]$

D. $a \in [103, 112]$ and $b \in [19, 24]$

E. $a \in [68, 76]$ and $b \in [-36, -32]$

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9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{484}{289}} + 25i^2$$

A. Irrational

B. Nonreal Complex

C. Not a Complex Number

D. Pure Imaginary

E. Rational

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10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-5 - 3i)(-4 - 8i)$$

A. $a \in [38, 49]$ and $b \in [-33, -25]$

B. $a \in [38, 49]$ and $b \in [27, 29]$

C. $a \in [-4, 3]$ and $b \in [52, 54]$

D. $a \in [-4, 3]$ and $b \in [-53, -50]$

E. $a \in [19, 28]$ and $b \in [23, 26]$
